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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,022	08/18/2003	Michael J. Welsh	P04404US01	3206

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DES MOINES, IA 50309-2721

EXAMINER	
BRANNOCK, MICHAEL T	

ART UNIT	PAPER NUMBER
1649	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,022	WELSH ET AL.	
	Examiner	Art Unit	
	Michael Brannock	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application: Claims and Amendments

Applicant is notified that the amendments put forth on October 2, 2006, have been entered in full.

Response to Amendment

Maintained Rejections:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, as set forth previously and reiterated below. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are directed to treating conditions by administering a therapeutically-effective amount of an antagonist, agonist, or modulator of DEG/ENaC channel proteins, however no such therapeutically effective compounds are known to exist and nor does the specification describe them. Waldmann-R et al., Ann NY Acad Sci, 30(67-76)1999 state that protons are the only known activator (agonist) of DEG/ENaC channel proteins (ASIC channels), and indicate that activation of these channels contributes to disease states in ischemia and epileptic seizures (page 74); the specification has not taught which agonists would be useful for treating any particular disorder, and nor would agonists be expected to be useful as taught by Waldmann-R et al. Furthermore, Deagle-WR, US Patent Publication 2005/0267009, teach that

amiloride is the only known compound that blocks ASICs, however the effect is not potent and not selective as indicated by amiloride's potent blockade of other receptor targets, which precludes its clinical use as an ASIC antagonist (see paragraph 0107).

While it is certainly reasonable to expect that specific antagonists of specific DEG/ENaC channel proteins would some day be found and prove useful in the treatment of disorders such as pain and inflammation, as discussed by Waldmann-R et al., at the bottom of page 74, the instant specification provides no teaching of these yet to be found useful compounds. In *Brenner v. Manson*, 148 U.S.P.Q. 689 (Sus. Ct, 1966), the court held that:

> "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility", "[u]nless and until a process is refined and developed to this point-where specific benefit exists in currently available form-there is insufficient justification for permitting an applicant to engross what may prove to be a broad field", and "a patent is not a hunting license", "[i]t is not a reward for the search, but compensation for its successful conclusion."

The instant claims are drawn to a methods of treatment using unknown compounds; thus the specific benefit set forth in the claims does not exist in a currently available form. "Tossing out the mere germ of an idea does not constitute enabling disclosure... [R]easonable detail must be provided in order to enable members of the public to understand and carry out the invention." Genentech, Inc. v. Novo Nordisk Inc., 108 F.3d 1361, 1366, 42 U.S.P.Q.2d 1001, 1005 (Fed. Cir. 1997).

Due to the large quantity of experimentation necessary to find compounds that can be used in the claims, the lack of direction/guidance presented in the specification regarding which structural features are required in order to provide activity, the absence of working examples

directed to same, the complex nature of the invention, the state of the prior art which indicates that such compounds are not known to exist, and the breadth of the claims which fail to recite any structural limitations, undue experimentation would be required of the skilled artisan to make and use the claimed invention.

Applicant argues that "activating" has been removed from claim 11 and that claims 1 and 2 have been canceled. This argument has been fully considered but not deemed persuasive. The rejection is not directed solely to agonists, but to antagonists as well. Neither of which were taught in the specification or known in the art effective for treatment.

Applicant argues that the claims have been amended to more specifically claim treatment of pain. This argument has been fully considered but not deemed persuasive. The issue is that no compounds required by the method were known or taught.

Applicant argues that the claims are directed to methods not compounds. This argument has been fully considered but not deemed persuasive. The compounds are required to practiced the claimed methods.

Applicant presents three post-filing date papers, Dube, Diochot, and Escoubas, that allegedly teach compounds suitable for use in the claimed invention. This argument has been fully considered but not deemed persuasive. It is this type of extensive research and investigation that the instant specification simply invites the skilled artisan to embark on without providing any teaching as to what particular compounds might ultimately be useful. These references speak to the non-routine nature of their accomplishments. Dube reviews the state of the art, stating that "To date, the physiological and pathophysiological role ASICs remain poorly understood, primarily as a result of the lack of suitable pharmacological tools", i.e. the lack of

specific agonists and antagonists, see col 2 of page 89. Thus, if these compounds could be obtained through routine experimentation, then assuredly Debe wound not have made that statement. Additionally, Escoubas does not seem to be on point because the compounds identified by this group do not effect ASIC3 receptors which are the only known to be involved in pain; and Escoubas only expresses the hope that appropriate compounds can be found in the future, see the last 3 paragraphs of page 25121.

Applicant argues that methods for identifying compounds which inhibit, activate or modulate the acid-sensing ion channels were patented and the disclosure of the patent is the same as the instant application. This argument has been fully considered but not deemed persuasive. The issue is that the claims require such compounds. The methods referred to above only recognize a given compound as inhibiting, activating or modulating the acid-sensing ion channel; they do not produce such compounds. And there is no evidence that producing such compounds would be routine.

Claims 3-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, as set forth previously and reiterated below. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims require compounds for treating conditions associated with the response of acid-sensing ion channels, yet known are taught in the specification and nor are any known in the art. Waldmann-R et al., Ann NY Acad Sci, 30(67-76)1999 state that protons are the only known activator (agonist) of DEG/ENaC

channel proteins (ASIC channels), and indicate that activation of these channels contributes to disease states in ischemia and epileptic seizures (page 74); the specification has not taught which agonists would be useful for treating any particular disorder, and nor would agonists be expected to be useful as taught by Waldmann-R et al. Furthermore, Deagle-WR, US Patent Publication 2005/0267009, teach that amiloride is the only known compound that blocks ASICs, however the effect is not potent and not selective as indicated by amiloride's potent blockade of other receptor targets, which precludes its clinical use as an ASIC antagonist (see paragraph 0107)

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

The skilled artisan cannot envision the detailed chemical structure of the required "composition that inhibits, activates or modulates the acid sensing ion channels...in a therapeutically-effective amount", and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. Applicant is reminded that *Vas-Cath* makes clear that the written

description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Applicant argues that "activating" has been removed from claim 11 and that claims 1 and 2 have been canceled. This argument has been fully considered but not deemed persuasive. The rejection is not directed solely to agonists, but to antagonists as well. Neither of which are taught in the specification or known in the art effective for treatment at the time the application was filed, so Applicant could not be in possession of such.

Applicant argues that the examiner appears to be requiring literal support for the claim when all that is required is possession of the concept of what is claimed. This argument has been fully considered but not deemed persuasive. The concept in question, i.e. an ASCI antagonist suitable for treatment, was clearly not in Applicant's possession at the time of filing. Applicant argues that unlike *Fiers* and *Amgen* the claims are directed to methods not compounds. This argument has been fully considered but not deemed persuasive. The methods require possession of the compounds, which the skilled artisan would not recognize that Applicant was in possession of at the time of filing.

Conclusion

No claims are allowable.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX months.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Brannock, Ph.D., whose telephone number is (571) 272-0869. The examiner can normally be reached on Mondays through Fridays from 10:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, Ph.D., can be reached at (571) 272-0867. Official papers filed by fax should be directed to **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

MB

December 10, 2006

JANET L. ANDRES
SUPERVISORY PATENT EXAMINER